

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/BE2005/000043

International filing date (day/month/year)  
30.03.2005

Priority date (day/month/year)  
31.03.2004

International Patent Classification (IPC) or both national classification and IPC  
B05D3/14, B05D7/24, H05H1/24

Applicant  
VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/BE2005/000043

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/BE2005/000043

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-14,17
	No: Claims	15,16,18-20
Inventive step (IS)	Yes: Claims	1-14
	No: Claims	15-20
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VI Certain documents cited**

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1. Certain published documents (Rules 43bis.1 and 70.10)

and /or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

**see form 210**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/BE2005/000043

**IAP5 Rec'd PCT/PTO 28 SEP 2006**

**Re Item V**

- (1) US-B1-6 664 737
  - (2) US-A-2002/182319
  - (3) US-A-2003/104140
  - (4) US-A-5 523 124
  - (5) EP-A-1 073 091
1. The closest prior art is represented by document (3) which describes a method for coating a substrate with an inorganic-organic polymer material using the Dielectric Barrier Discharge (DBD) technique. The coating process of claim 1 is distinguished from that of document (1) by mixing aerosols containing hybrid organic/inorganic cross-linked pre-polymers formed via sol gel processing, into the plasma discharge. The requirements of Article 33(2) PCT regarding novelty are hence met.
  2. In the prior art documents (2) and (4), as discussed by the applicant on page 4 of the description, the Dielectric Barrier Discharge (DBD) technique has been used for coating a substrate with an inorganic-organic polymer, with unsatisfactory results. There is no suggestion in the prior art that aerosols containing hybrid organic/inorganic cross-linked pre-polymers formed via sol gel processing should or could be used with the (DBD) technique. The subject matter of the independent claims is thus novel and inventive.
  3. The approach of the present application is hence not obvious in the light of document (3) hence the subject-matter of claim 1 also satisfies the requirements of Article 33(3) PCT as regards inventive activity.
  4. Dependent claims 2 to 13 give particular embodiments of the invention. Claim 29 is for the coated substrate. These claims are new and non-obvious because the subject-matter of these claims is also not known in or predictable from the prior art.
  5. All technical features of the apparatus for generating and maintaining a plasma of claims 15, 16 and 18 to 20 are to be read in document (5), In particular, document (5) teaches (see paragraphs 10, 12, 36, 37, 40 and 48 of this document) a dielectric

barrier discharge apparatus for generating and maintaining a plasma. The apparatus comprises a pair of electrodes, a gap between the electrodes, and a voltage generator for applying a voltage between the electrodes. The electrodes consist of an electrically conducting material, wherein the electrodes are covered with an electrically insulating material, and wherein the alternating voltage has a frequency from 1 kHz to 200 MHz.. The electrodes have the form of planar plates or bars or cylinders. The electrodes can be arranged in parallel combination. And the electrodes are temperature controlled. These claims hence lack novelty and are disallowed under Article 33 (2) PCT. In addition, claims 15 and 16 lack novelty over document (1).

**Re Item VI**

WO-A-2004/028220

**Re Item VIII**

1. The terms "preferably" and "more preferably" mean that the features appearing after these terms are merely an option, and that in fact the claim is not limited to those particular features. Claims 4, and 10 are hence found to be unclear and hence to be contrary to Article 6 PCT.
2. The terms "Dynasil 40", "Bayresit VPLS 2331" and "LR 8765 silane employed in claim 9 and appear to be registered trade marks have no precise meaning as they are not internationally accepted as standard descriptive terms, thereby rendering the definition of the subject-matter of claim 9 unclear (Article 6 PCT).